REMARKS

Further and favorable reconsideration is respectfully requested in view of the foregoing amendments and following remarks.

Initially, Applicants wish to thank the Examiner for her helpful remarks during the telephone conversation of March 19, 2007. Applicants have amended claim 2 as discussed during the conversation. The Examiner is reminded that during this conversation she indicated that the amendments would not be entered after final rejection, because they require further search and/ or consideration. Thus, the Examiner suggested that Applicants file a Request for Continued Examination with the amendments. The Examiner assured Applicants' representative that she would not issue a first action final rejection in this situation.

Claim 2 has been amended to recite slow cooling at a rate of not more than 100°C/hr. Support for this limitation is found on page 10, lines 11-12 of the specification. New claim 3 has been added to the application, reciting that the slow cooling is carried out in a furnace. Support for this new claim is found on page 10, lines 6-9 of the specification. Therefore, no new matter has been added to the application.

The patentability of the present invention over the disclosures of the references relied upon by the Examiner in rejecting the claim will be apparent upon consideration of the following remarks.

The rejection of claim 2 under 35 U.S.C. § 103(a) as being unpatentable over Okuda et al. (U.S. 4,963,200) in view of www.novantchemicals.com is respectfully traversed.

The Examiner takes the position that the recitation in claim 2 of "slow cooling at a rate of not more than a ferrite-forming critical rate" does not limit the cooling rate either quantitatively (e.g. no more than X °C per hour) or to a specific cooling method (e.g. furnace cooling). The Examiner further states that normalizing heat treatment is understood in the art to include air cooling, which lacking further limitations can be considered "slow cooling". Further, the Examiner states that although the instant specification discloses furnace cooling at rates of not more than 100°C/hr, limitations from the specification are not read into the claims.

However, as discussed above, Applicants have amended claim 2 to recite that the slow cooling is at a rate of not more than 100°C/hr. Thus, the claims now recite a quantitative cooling rate, as referred to by the Examiner.

During the discussion with the Examiner referred to above, the Examiner indicated that if the cited references only teach or suggest air cooling, then the amendment to claim 2 would overcome the rejection of record. Thus, Applicants respectfully assert that the rejection of claim 2 should be withdrawn.

In the method of the present invention, the final heat treatment to obtain a coarse grain structure involves heating to and holding at a room temperature of not less than the A_{C3} transformation point (austenitization heat treatment) and slow cooling at a rate of not more than a ferrite-forming critical rate.

In the steel composition used in the present invention, when heating up to about 1000°C, the matrix phase transformation to austenite (γ) phase occurs, and then, martensite transformation occurs when fast cooling, or austenite (γ) ⇒ ferrite (α) phase transformation occurs when slow cooling.

The wording "slow cooling at a rate of not more than a ferrite-forming critical rate", as previously recited in the claim, means cooling to cause austenite (γ) ⇒ ferrite (α) phase transformation, and not cooling to cause martensite transformation. Therefore, the structure after slow cooling indicates ferrite phase, not martensite phase.

In order to more clearly express such a slow cooling, claim 2 has been amended to recite "slow cooling at a rate of not more than 100°C/hr", as discussed above.

On the contrary, Okuda et al. relates to an ODS steel which has been subjected to heat treatment involving normalizing-and-tempering to produce a matrix having a tempered martensitic structure. This means that the martensitic structure has been produced by normalizing, and the tempered martensitic structure having excellent toughness has been produced by tempering. It should be noted that, in Okuda et al., the ferritic structure is not produced by tempering. Thus, fast cooling at a rate of more than a ferric-forming critical rate has been conducted in Okuda et al.

Corrosion resistance is desired in ODS steel, but the object of the present invention is to improve the high-temperature strength thereof. To improve corrosion resistance, the conditions of the surface, such as the presence of a surface coating layer, is

important. Novant trionix, cited by the Examiner, is a surface coating pigment to improve corrosion resistance.

On the contrary, in order to improve the high-temperature strength of ODS steel, it is important to control the internal structure thereof. Thus, in the present invention, Fe_2O_3 powder is not coated on the surface, but is mixed as one of the alloy powders and the resulting mixed powder is subjected to mechanical alloying treatment. By using Fe_2O_3 powder as one of the alloy powders, Ti combines with excess oxygen to form an oxide without combining with C to form a carbide, Therefore, Ti does not lower the C concentration in the matrix, resulting in formation of coarse grain structure during slow cooling. See page 6, line 16 to page 7, line 2 of the specification. Such control of the internal structure of ODS steel for improving high-temperature strength is quite different from controlling the surface condition to improve corrosion resistance.

In general, corrosion resistance has no relation to high-temperature strength in the technical field of ODS steel. Accordingly, a person skilled in the art would not use the coating material of Novant trionix as an alloying material of ODS steel.

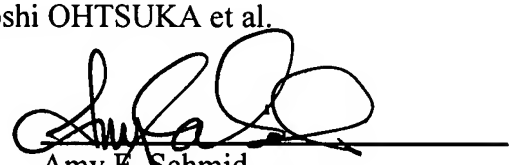
For these reasons, the invention of claim 2, as well as new claim 3, is clearly patentable over Okuda et al. in view of www.novantchemicals.com.

Therefore, in view of the foregoing amendments and remarks, it is submitted that the ground of rejection set forth by the Examiner has been overcome, and that the application is in condition for allowance. Such allowance is solicited.

If, after reviewing this Amendment, the Examiner feels there are any issues remaining which must be resolved before the application can be passed to issue, the Examiner is respectfully requested to contact the undersigned by telephone in order to resolve such issues.

Respectfully submitted,

Satoshi OHTSUKA et al.

By: 

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